

NOTES ON SOME UNITED STATES GRASSHOPPERS OF
THE FAMILY ACRIDIDAE.

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Some time ago the United States National Museum received in exchange a pair of *Heliastus minimus* Scudder from the paratypical material in the Museum of Comparative Zoology in Cambridge, Massachusetts. About the same time there was received in exchange from the Snow collection in Kansas a single female specimen from Arizona labeled as this species. On studying this material, and later making further comparisons of material in Cambridge, it was found that Scudder's species was not a true *Heliastus* and that the female received from the Snow collection was not Scudder's species, nor congeneric with it. Thus a new genus is here erected for *Heliastus minimus* and the female received from Snow is described as a new genus and species.

XERACRIS, new genus.

Allied to *Anconia*, *Heliastus*, and *Ramona* but readily distinguishable from these genera by the metasternal interspace being subquadrate in the female and longer than broad in the male, while in these genera this interspace is at least as broad as long in both sexes, and in the female, broadly transverse. From *Heliastus* and *Ramona* it is also easily separated by having a distinct intercalary vein present on the elytra, in this respect agreeing with *Anconia*, the most nearly allied genus.

Description.—Head moderate, slightly broader than the anterior portion of the pronotum; eyes about as prominent as in *Heliastus*, less prominent than in *Ramona* or typical *Anconia*. Pronotum quite strongly constricted mesially, the anterior portion noticeably narrower than the posterior; lateral carinae not present and the median carina present only as a raised line, barely noticeable except on the posterior lobe, and cut by all three transverse sulci; anterior margin subtruncate, mesially somewhat rounded, the posterior margin obtuse angulate; mesosternal interspace of both sexes transverse but narrower than either of the lobes themselves; meta-

sternal interspace subquadrate in the female, in the male longer than broad. Elytra extending to or beyond the tips of the hind femora; scapular area in neither sex much expanded, the intercalary vein distinct and bordered on each side with a single row of quadrate cells; the discoidal area is not always closed apically but sometimes continues open to the end of the elytra, or but partly closed. Wings almost entirely hyaline, the tip with a few veins more or less infuscated and the disk with the merest trace of a bluish tinge in some lights. Legs moderately slender, the posterior femora at the widest part scarcely as broad as the head across the eyes; posterior tibiae yellowish with eight spines on the outer margin above, the spines themselves yellow with the apical half black. Cerei simple in both sexes, shorter in the female than in the male; supraanal plate of male scarcely sulcate mesially, the fercula short, quadrate and far separated; subgenital plate of the male apically pointed; valves of the ovipositor short, the upper pair deeply excavate dorsally.

Type.—*Heliastus minimus* Scudder.

CONIANA, new genus.

In general appearance very similar to the foregoing but readily separable from it by having the metasternal interspace broadly transverse, at least in the female, and by having the apical calcears of the posterior tibiae longer, the outer pair being about twice as long as the terminal dorsal spine.

Type.—*Coniana snowi*, new species.

The relationship of this and the preceding genus with their allies is shown by the key given on a following page.

CONIANA SNOWI, new species.

One female, Bill Williams Fork, Arizona. F. A. Snow collector.

A small whitish species superficially resembling very closely the *Xeracris minima* of Scudder, but readily separated from that species by the metasternal interspace, which is fully twice as broad as long in this species, while in *minima* it is scarcely longer than broad. The mesosternal interspace is also decidedly broader than in *minima*, being here broader than either of the lobes themselves, the reverse being true of *minima*. A color character also distinguishes these two species, *minima* having the disk of the pronotum posteriorly marked more or less with fuscous and the upper part of the front portion of the lateral lobes blackish, while in the species here characterized these portions are nearly uniformly and very slightly maculate; the surface of the pronotum of this species is also much more roughened and pitted than in *minima*. To the various members of the genus *Anconia* this species is very readily separated by its smaller size and also by the less prominent eyes and the color of the elytra, which is here

covered for their entire length with small, clear-cut dark dots on the pale ground color. The wings of the unique type are clear hyaline, and the hind tibiae are very faintly tinged with bluish and bear eight black-tipped spines on the outer margin above; terminal calcars long, the outer pair about twice as long as the adjacent dorsal spine; posterior femora with three or four dark spots above.

Length: Pronotum, 3.5 mm.; elytra, 19 mm.; hind femora, 12 mm.

Type.—In United States National Museum. Cat. No. 18483, U.S.N.M.

This is an interesting little species, and bears such superficial resemblance to *Xeracris minima* as to make its confusion with that insect very likely unless considerable care is exercised.

HELIAULA, new genus.

The author's first acquaintance with *Aulocara rufum* of Scudder was in 1903, when he described specimens from Kansas and Colorado as new under the name *Heliastus guanieri*. Failure to associate it with Scudder's description was due to the fact that its generic characters did not at all indicate relationship to *Aulocara*. Nor is its relationship much nearer, if any, to *Heliastus* than to *Aulocara*. Therefore, at the suggestion of Messrs. Rehn and Hebard, it is removed from both the above genera and for it the new generic name *Heliaula* is here proposed. The following key will serve for the separation of this genus from others allied to *Heliastus*.

Key to the genus Heliastus and allies.

Metasternal interspace broadly transverse in the female, in the male at least as long as broad.

Elytra with a distinct intercalary vein.

Calcaria of hind tibiae long, the outer pair about twice as long as the adjacent dorsal spine..... *Coniana* Caudell.

Calcaria of hind tibiae shorter, the outer pair but little longer than the adjacent dorsal spine..... *Anconia* Scudder.

Elytra without a distinct intercalary vein.

Body and hind femora stout, the latter at its widest part nearly or quite as broad as the head across the eyes.

Pronotum conspicuously narrowing anteriorly; interocular space narrower than the width of one of the eyes, the scutellum of the vertex with well elevated margins..... *Heliastus* Saussure.

Pronotum quadrate, no narrower anteriorly than posteriorly; interocular space as broad as the width of one of the eyes, the scutellum of the vertex with the margins low..... *Heliaula* Caudell.

Body and hind femora slender, the latter at its widest part scarcely more than one-half as broad as the head across the eyes..... *Ramona* Bruner.

Metasternal interspace quadrate or barely transverse in the female, in the male distinctly longer than broad..... *Xeracris* Caudell.

MICROTES NUBILA Scudder.

This species is a synonym of the earlier described *Scirtettica occidentalis* of Bruner. The genus seems amply distinct, and thus the species is to be known as *Microtes occidentalis* Bruner.

THE GENUS ALPHA BRUNNER.

The name *Cordillacris* has been substituted for Brunner's genus *Alpha* by Mr. Rehn¹ on the grounds of preoccupation. In proposing *Cordillacris* Mr. Rehn gives the original reference to *Alpha* as "Smiths. Misc. Coll., XIV, p. 121 (1875)." The volume in this reference should be CCLIV and the page is 117. But the first use of *Alpha*, however, was nearly a quarter of a century earlier when it was used in three different senses by Saussure in his "Etudes Fam. Vesp., vol. ii, p. 167 (1853)," and in the same work, vol. 3, pp. 128, 137, and 160 (1854). But I fail to find that Saussure used this name other than as a division between the species and genus. As such groups or divisional names have no place in nomenclature² they do not preoccupy and thus *Alpha* seems to have been available as a generic name when erected in the Orthoptera by Brunner in 1893.

THE GENERIC NAME MACNEILLIA OF SCUDDER.

This generic name was proposed to replace the genus *Pedeticum* of McNeill on the assumption that that name was preoccupied by the generic name *Pedeticus* of Laporte in the Hemiptera. But by the rule of identical spelling *Pedeticus* does not preoccupy *Pedeticum* and thus Scudder's name *Macneillia* was not needed.

AEOLOPLIDES, new genus.

The type species of the genus *Acoloplus* Scudder is *Caloptenus regalis* by original designation. But *regalis* is now known to be a species of *Melanoplus* and thus *Acoloplus*, which follows its type species, is a synonym of *Melanoplus*. The species formerly included in *Acoloplus* are thus left without a generic name, and for them the genus *Aeoloplides* is here proposed, with the *Pezotettix chenopodii* of Bruner as the designated type.

THE GENUS BOOPEDON OF THOMAS.

Key to Species.

1. Principal sulcus of the pronotum not far behind the middle in either sex; males with elytra two or more times as long as the pronotum.....2.
- Principal sulcus of the pronotum, especially in the male, generally much behind the middle; males with elytra less than two times as long as the pronotum....4.

¹ Can. Ent., vol. 23, 1901, p. 271.² Entomological Code, Par. 90.

2. General color uniformly black or brown, the elytra of both sexes without distinct maculation but the tip darker than the rest; posterior femora uniform in color except for a subbasal annulus.....*nigrum* Thomas. (= *fuscum* Brunner.)
 General color of the male as above but the elytra no darker apically than elsewhere, or with indication of discal maculation, of the female brown or yellowish, the elytra with distinct maculation.....3.
3. Male with the posterior femora uniform in coloration, or with a more or less distinct subapical annulus; female with the elytra brown with a yellow stripe near each margin and with a few small yellow spots in the discal field.
nubilum Say. (= *flavofasciatum* Thomas.)
 Males with the posterior femora twice banded across the outer face besides the subapical annulus; female with the elytra yellowish or brown, no distinct yellow stripe as above and with three or four larger roundish black spots in the discal field, more distinct in individuals with yellowish elytra.
nubilum, var. *maculata*, new variety.
4. General color testaceous varied with orange, fuscus and black; hind femora conspicuously banded.....*auriventris* McNeill.
 General color brownish varied with black above, lighter beneath; hind femora obscurely banded.....*auriventris*, var. *savannarum* Brunner.

BOOPEDON NUBILUM, var. MACULATA, new variety.

The distinctly banded posterior femora of the male and the distinctive maculation of the elytra of the female will serve for the ready separation of this variety from its allies. The hind tibiae and the ventral surface of the abdomen of the selected type and several of the paratypes are reddish, but in others the tibiae are brownish and abdomen yellowish. In all specimens the hind tibiae are broadly banded with yellowish toward the base. The size is rather large and there seems to be no very great variation to judge from the material before me. The measurements of the selected male type and female allotype are as follows:

Length; pronotum, male, 5.5 mm.; female, 8; elytra, male, 19, female, 11.5; hind femora, male, 19, female, 23.5.

Type.—Male, Victoria, Texas, June. A. N. Caudell, collector. Allotype, same data. Paratypes, one female and 4 males, same data as type and allotype; eight males, Texas, Belfrage coll.; one adult and two immature males, San Antonio, Texas; one male, Columbus, Texas; one male, no locality.

Type and allotype.—In United States National Museum. Cat. No. 18484, U.S.N.M.

The specimen figured in Howard's Insect Book (plate 34, fig. 3) as *B. nubilum* is this variety and shows very nicely the conspicuous banding of the hind femora.

B. nubilum was characterized from the male sex only as is evident from the original description. *B. flavofasciatum* was described from the female only and I consider it the same as *nubilum*. The specimens described by Thomas from southeastern Colorado as *nubilum* of Say are, as shown by comparing his original material in the United

States National Museum with specimens from Arizona, identical with the form described recently by Bruner as *B. fuscum*. Also, from the original description of *B. nigrum* of Thomas and his subsequent quoting of that species in the synonymy of what he took for *nubilum* Say but which was, as shown above, the *B. fuscum* of Bruner, it is evident that this was also the same species and, being the older, should supplant Bruner's name.

MELANOPLUS MUTATUS, new name.

Melanoplus minor of Scudder, described as *Pezotettix minor* in 1875, is a primary homonym of *Pezotettix minor* Walker, an African grasshopper described in 1870.¹ Under all recent codes of nomenclature Scudder's name must fall and for it the new name *Melanoplus mutatus* is here proposed.

MELANOPLUS MARGINATUS Scudder.

Melanoplus marginatus pauper SCUDDER.

The brachypterous specimens of *Melanoplus marginatus* constitute the typical form, being the only ones mentioned in the original description. Scudder's varietal name *pauper* therefore falls as a synonym of the typical name *marginatus*, according to paragraph 31 of Entomological Code. The long-winged form is properly called *amplus*.

MELANOPLUS FEMUR-RUBRUM DeGeer.

Melanoplus coloradus CAUDELL.

Melanoplus coloradus Caudell is but a minor variety of *femur-rubrum*, the only constant differentiating character being the fercula of the male surpassing more or less the mesial interruption of the median sulcus of the supraanal plate. This character is of scarcely sufficient value to hold a name, and this species is therefore sunk as a synonym of *femur-rubrum*.

MELANOPLUS DEVASTATOR Scudder.

Melanoplus devastator typicalis SCUDDER.

This varietal name should be dropped and the name *devastator* alone used according to paragraph 31 of the Entomological Code.

MELANOPLUS DEVASTATOR Scudder.

Melanoplus devastator affinis SCUDDER.

The name *affinis* as here used is invalidated by the earlier use as a specific name by the same author. Paragraph 37 of Entomological Code applies here. But the characters separating this variety from the typical form are of such minor importance that the name may

¹ Cat. Derm. Salt. Brit. Mus., vol. 4, 1870, p. 699.

well be sunk into synonymy under *devastator*, as it scarcely deserves a new name being proposed for it.

MELANOPLUS DIMINUTUS Scudder.

Melanoplus consanguineus SCUDDER.

Melanoplus consanguineus as suggested by its author in the original description, is not distinct from the *diminutus* of the same author. It should therefore fall into synonymy under that species.

MELANOPLUS DEVASTATOR Scudder.

Melanoplus virgatus SCUDDER.

Melanoplus virgatus is a synonym of *Melanoplus devastator*, no constant differentiating characters separating it from that species.